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10/808,031	03/23/2004	Takeshi Shimizu	073338.0114 (02-52471 FLA	5652

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EXAMINER	
RIYAMI, ABDULLA A	

ART UNIT	PAPER NUMBER
2616	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/808,031	SHIMIZU, TAKESHI	
	Examiner	Art Unit	
	Abdullah Riyami	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11/09/2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 March 2004* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claim1-20 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christensen et al. (US 5491687) in view of Abdo et al. (US 2004/0052257).

6. As per claim 1, Christensen et al. discloses a method for error detection in a high-speed switching environment, comprising:

receiving, at a switch input port, a plurality of packets, including a first packet having at least first and second portions (see abstract, figure 1, block 72, figure 2a, blocks 202 and 204);

initiating switching of the first portion before the entire second portion is received at the switch input port (see columns 1-3);

Christensen et al. discloses frame examination for errors (see column 5) but does not explicitly disclose using tag data associated with the first packet to calculate error detection data for the first packet, the error detection data calculated before the entire second portion is received at the switch input port; performing an error detection technique on the first packet using the error detection data that was calculated using the tag data associated with the first packet.

Abdo et al. discloses using tag data associated with the first packet to calculate error detection data for the first packet (see paragraph 47), the error detection data calculated before the entire second portion is received at the switch input port (see paragraph 47); performing an error detection technique on the first packet using the

error detection data that was calculated using the tag data associated with the first packet (see paragraph 47).

Christensen et al. and Abdo et al. are analogous art since they are from the same field of endeavor of cut-through switching.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to use Abdo et al.'s error checking technique (see paragraph 47) in Christensen et al.'s switch (see abstract) for better error examination when operating in the first mode of operation.

The motivation to combine would have been to have a switch with a better error detection technique incorporated with cut-through forwarding to select the proper outbound switch port without having to receive the packet in its entirety.

As per claim 2, Christensen et al. teaches of a method in a high-speed switching environment (see column1-3), wherein the initiating switching of the first portion is accomplished in accordance with a cut-through forwarding technique (see column 1-3).

As per claim 3, Christensen et al. teaches of a method in a high-speed switching environment (see column 1-4), wherein the initiating switching of the first portion is accomplished in accordance with a delayed cut-through forwarding technique (see column 1-4).

As per claim 4, Christensen et al. teaches of a method in a high-speed switching environment (see columns 1-4) comprising looking up a tag ID (see column 5) for association with the first packet (see column 5).

As per claim 5, Christensen et al. teaches of a method in a high-speed switching environment (see columns 1-4), further comprising assigning the tag ID for association with the first packet (see column 5).

As per claim 6, Christensen et al. teaches of a method in a high-speed switching environment (see figure 1, columns 1-5), further comprising receiving the first portion (see figure 1, columns 1-5) at a switch output port wherein error detection is performed at the switch output port (see figure 1, columns 1-5).

As per claim 7 and 8, Christensen et al. does not expressly disclose the error detection technique is accomplished according to a limited cyclical redundancy checksum technique and the cyclical redundancy checksum technique includes recalculating a CRC of the first packet based only upon changes in the tag ID of the first packet.

Abdo et al. discloses the error detection technique is accomplished according to a limited cyclical redundancy checksum technique and the cyclical redundancy checksum technique includes recalculating a CRC of the first packet based only upon changes in the tag ID of the first packet (see paragraph 47).

Christensen et al. and Abdo et al. are analogous art since they are from the same field of endeavor of cut-through switching.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to use Abdo et al.'s error checking technique (see paragraph 47) in Christensen et al.'s switch (see abstract) for better error examination when operating in the first mode of operation.

The motivation to combine would have been to have a switch with a better error detection technique incorporated with cut-through forwarding to select the proper outbound switch port without having to receive the packet in its entirety.

As per claim 9, Christensen et al. discloses a system for error detection in a high-speed switching environment, comprising: a first switch input port being operable to receive a plurality of packets, the plurality of packets including a first packet having first and second portions (see abstract, figure 1, block 72, figure 2a, blocks 202 and 204); a switch core operable (see figure 1): and a detection module (see figure 1) being operable to perform an error detection technique on the first packet using the error detection data that was calculated using the tag data associated with the first packet (see column 1-5).

Christensen et al. does not expressly disclose using tag data associated with the first packet to calculate error detection data for the first packet~ the error detection data calculated before the entire second portion is received at the switch input port; and switch the first portion before the entire second portion is received at the first switch input port;

Abdo et al. discloses using tag data associated with the first packet to calculate error detection data for the first packet (see paragraph 47), the error detection data calculated before the entire second portion is received at the switch input port (see paragraph 47); performing an error detection technique on the first packet using the error detection data that was calculated using the tag data associated with the first packet (see paragraph 47).

Christensen et al. and Abdo et al. are analogous art since they are from the same field of endeavor of cut-through switching.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to use Abdo et al.'s error checking technique (see paragraph 47) in Christensen et al.'s switch core (see abstract) for better error examination when operating in the first mode of operation.

The motivation to combine would have been to have a switch with a better error detection technique incorporated with cut-through forwarding to select the proper outbound switch port without having to receive the packet in its entirety.

As per claim 10, Christensen et al. teaches of a system in a high-speed switching environment (see columns 1-4) comprising looking up a tag ID (see column 5) for association with the first packet (see column 5).

As per claim 11, Christensen et al. teaches of a system in a high-speed switching environment (see columns 1-4), further comprising assigning the tag ID for association with the first packet (see column 5).

As per claim 12, Christensen et al. teaches of a system in a high-speed switching environment (see columns 1-4), further comprising a switch output port being operable to receive the first portion of the first packet (see column 1-5).

As per claim 13, Christensen et al. teaches of a system in a high-speed switching environment (see columns 1-4), wherein the switch output port comprises the error detection module.

As per claim 14 and 15, Christensen et al. does not expressly disclose the error detection technique is accomplished according to a limited cyclical redundancy checksum technique and the cyclical redundancy checksum technique includes recalculating a CRC of the first packet based only upon changes in the tag ID of the first packet.

Abdo et al. discloses the error detection technique is accomplished according to a limited cyclical redundancy checksum technique and the cyclical redundancy checksum technique includes recalculating a CRC of the first packet based only upon changes in the tag ID of the first packet (see paragraph 47).

Christensen et al. and Abdo et al. are analogous art since they are from the same field of endeavor of cut-through switching.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to use Abdo et al.'s error checking technique (see paragraph 47) in Christensen et al.'s switch (see abstract) for better error examination when operating in the first mode of operation.

The motivation to combine would have been to have a switch with a better error detection technique incorporated with cut-through forwarding to select the proper outbound switch port without having to receive the packet in its entirety.

As per claim 16, Christensen et al. teaches of a system in a high-speed switching environment (see column1-3), wherein the initiating switching of the first portion is accomplished in accordance with a cut-through forwarding technique (see column 1-3).

As per claim 17, Christensen et al. teaches of a system in a high-speed switching environment (see column 1-4), wherein the initiating switching of the first portion is accomplished in accordance with a delayed cut-through forwarding technique (see column 1-4).

As per claim 18, Christensen et al. teaches of a system in a high-speed switching environment (see abstract, figure 1, block 72, figure 2a, blocks 202 and 204) comprising: one or more memory structures (see columns 1-5); a plurality of input structures (see columns 1-5) that are each operable to receive a packet (see columns 1-5) communicated from a component of a communications network and write the received packet (see column 1-5) to one or more of the one or more memory structures (see columns 1-5); a first switching structure (see columns 1-5) coupling the plurality of input structures to the one or more memory structures (see columns 1-5) such that each of the plurality of input structures are operable to write to each of the one or more memory structures (see column 1-5);

a plurality of output structures that are each operable to read a packet from one or more of the one or more memory structures (see columns 1-5) for communication to a component of the communications network; a second switching structure (see columns 1-5) coupling the plurality of output structures to the one or more memory structures such that each of the plurality of output structures are operable to read from each of the one or more memory structures (see columns 1-5), an output structure being operable to read a first portion of one of the packets from one or more of the one or more memory units for communication to a first component of the communications network

before an input structure has received a second portion of the one of the packets communicated from a second component of the communications network (see columns 1-5); and of tag data associated with the first packet (see columns 1-5) and a detection module (see figure 1 and columns 1-5).

Christensen et al. does not expressly disclose a detection module operable for performing an error detection technique on the first packet using tag data associated with the first packet.

Abdo et al. discloses using tag data associated with the first packet to calculate error detection data for the first packet (see paragraph 47), the error detection data calculated before the entire second portion is received at the switch input port (see paragraph 47); performing an error detection technique on the first packet using the error detection data that was calculated using the tag data associated with the first packet (see paragraph 47).

Christensen et al. and Abdo et al. are analogous art since they are from the same field of endeavor of cut-through switching.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to use Abdo et al.'s error checking technique (see paragraph 47) in Christensen et al.'s switch core (see abstract) for better error examination when operating in the first mode of operation.

The motivation to combine would have been to have a switch with a better error detection technique incorporated with cut-through forwarding to select the proper outbound switch port without having to receive the packet in its entirety.

As per claim 19, Christensen et al. teaches of a system in a high-speed switching environment, wherein the memory structures are operable to store tag IDs for association with the packets (see column 5).

As per claim 20, Christensen et al. does not expressly disclose the error detection technique is accomplished according to a limited cyclical redundancy checksum technique.

Abdo et al. discloses the error detection technique is accomplished according to a limited cyclical redundancy checksum technique (see paragraph 47).

Christensen et al. and Abdo et al. are analogous art since they are from the same field of endeavor of cut-through switching.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to use Abdo et al.'s error checking technique (see paragraph 47) in Christensen et al.'s switch (see abstract) for better error examination when operating in the first mode of operation.

The motivation to combine would have been to have a switch with a better error detection technique incorporated with cut-through forwarding to select the proper outbound switch port without having to receive the packet in its entirety.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See form 892.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abdullah Riyami whose telephone number is (571) 270-3119. The examiner can normally be reached on Monday through Thursday 8am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Firmin Backer can be reached on (571)272-6703. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AR

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SUPERVISORY PATENT EXAMINER